

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-292-AD; Amendment 39-13797; AD 2004-19-03]

RIN 2120-AA64

Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-135 and EMB-145 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to certain EMBRAER Model EMB-135 and EMB-145 series airplanes, that currently requires revising the airplane flight manual and eventual disconnection of the precooler differential pressure switches. This amendment expands the applicability of the existing AD. This amendment also requires a one-time inspection of those additional airplanes to ensure the disconnection and insulation of the electrical connectors of certain precooler differential pressure switches located in the left and right pylons; and disconnection and insulation of the connectors, if necessary. The actions specified by this AD are intended to prevent incorrect operation of the precooler differential pressure switches, which could result in inappropriate automatic shutoff of the engine bleed valve, and consequent inability to restart a failed engine using cross-bleed from the other engine or possible failure of the anti-ice system. This action is also necessary to ensure that the flightcrew is advised of the procedures necessary to restart an engine in flight using the auxiliary power unit. This action is intended to address the identified unsafe condition.

DATES: Effective October 27, 2004.

The incorporation by reference of a certain publication, as listed in the regulations, is approved by the Director of the Federal Register as of October 27, 2004.

The incorporation by reference of a certain other publication, as listed in the regulations, was approved previously by the Director of the Federal Register as of July 3, 2000 (65 FR 39541, June 27, 2000).

ADDRESSES: The service information referenced in this AD may be obtained from Empresa Brasileira de Aeronautica S.A. (EMBRAER), P.O. Box 343–CEP 12.225, Sao Jose dos Campos–SP, Brazil. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the National Archives and Records Administration (NARA). For information on the availability of this material at

NARA, call (202) 741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

FOR FURTHER INFORMATION CONTACT: Todd Thompson, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1175; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 2000-13-02, amendment 39-11801 (65 FR 39541, June 27, 2000), which is applicable to certain EMBRAER Model EMB-135 and EMB-145 series airplanes, was published in the Federal Register on July 16, 2003 (68 FR 41973). The action proposed to require revising the airplane flight manual (AFM) and eventual disconnection of the precooler differential pressure switches. The action also proposed to expand the applicability of the existing AD. The action also proposed a one-time inspection of those additional airplanes to ensure the disconnection and insulation of the electrical connectors of certain precooler differential pressure switches located in the left and right pylons; and disconnection and insulation of the connectors, if necessary.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

Request To Use Temporary Revision (TR) 55-3 to the AFM

One commenter, an operator, requests that the Abnormal Procedures Section and Limitations Section of TR 55-3 to the EMBRAER EMB-145 AFM, revised on July 2, 2003, be allowed as a form of compliance to the AFM text included in and required by the proposed AD. The commenter states that TR 55-3 complies with the intent of the text listed in the proposed AD, but the wording is not identical.

We agree with the intent of the commenter's request to revise this AD to allow additional acceptable text for the AFM revisions to the Abnormal Procedures and Limitations Sections. We have changed paragraphs (d) and (e) of this final rule to specify that statements approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA (Revision 56 to the EMBRAER EMB-145 AFM is one approved source of statements); or the AFM statements included in this AD; may be used. The contents of TR 55-3 have been incorporated into Revision 56 of the AFM and TR 55-3 is no longer available. A TR is only available until the AFM that the TR revises has been updated to include the contents of the TR.

Request To Delete Paragraphs (d) and (e) of the Proposed AD

One commenter, the airplane manufacturer, requests the deletion of paragraphs (d) and (e) of the AD. Paragraphs (d) and (e) require revisions to the Limitations Section and the Abnormal Procedures Section of the AFM within 24 hours after the effective date of the proposed AD. The commenter bases its request on the length of the FAA's rulemaking process to issue a supersedure AD (AD 2000-13-02) and on the average flight hours for the Model EMB-145 fleet. The commenter states that the 24-hour compliance time is too short and could significantly impact operators' flight operations. The commenter notes that paragraph (f) of the proposed AD has a compliance time of 100 flight hours. The commenter also states that, based on the fleet utilization of Model EMB-145 series airplanes, all affected airplanes will disconnect and insulate or remove the differential pressure switch in less than 20 calendar days after the effective date of the AD. The commenter notes that paragraph (f) directly addresses the unsafe condition. Furthermore, paragraph (f) states that "Following accomplishment of

paragraph (f)(1), (f)(2), or (f)(3) of this AD, as applicable, the AFM revision required by paragraph (d) of this AD may be removed from the AFM."

We do not agree with the commenter's request to delete paragraphs (d) and (e) of this AD. As written, this AD addresses the unsafe condition with different actions having different compliance times. Paragraphs (d) and (e) of this AD require revising the AFM. Paragraph (f) of the AD requires doing a one-time general visual inspection of certain electrical connectors within 100 flight hours after the effective date of the AD. If the AFM revision is omitted, and an in-flight event occurs during the 100 flight hours after the effective date of the AD, the flightcrew may not be aware of the necessary procedures to restart an engine in flight using the auxiliary power unit. However, as discussed below in the "Changes to this Final Rule" paragraph, the compliance time for paragraphs (d) and (e) of this AD has been changed from within 24 hours after the effective date of this AD to within 14 days after the effective date of the AD.

Also, paragraphs (d), (e), and (f) of the AD are included under the "New Requirements of This AD" header and are applicable to airplanes having specific serial numbers that were not included in the applicability of AD 2000-13-02. The purpose of this AD is to expand the applicability of AD 2000-13-02 and require the currently required actions for the additional airplanes specified in paragraphs (d), (e), and (f) of this AD. Because the additional airplanes were not included in the applicability of AD 2000-13-02, they cannot be automatically included in paragraphs (a), (b), and (c) of this AD. (Adding new airplanes to the existing requirements would result in those airplanes being out of compliance as of the effective date of this AD.) Paragraphs (d) and (e) will not be deleted from this final rule.

Changes to This Final Rule

We have extended the compliance time in paragraphs (d) and (e) of this final rule. We have determined that these are non-emergency AFM revisions and that extending the compliance time for revising the AFM from 24 hours, as proposed, to 14 days will provide an acceptable level of safety.

We have also revised the cost impact section of this final rule to delete the new cost estimate for the disconnection of switches that was included in the proposed AD. We have determined that this is an "on-condition" action and that not all airplanes will be required to do this action.

Conclusion

After careful review of the available data, including the comments noted above, we have determined that air safety and the public interest require the adoption of the rule with the change described previously.

Change to Labor Rate Estimate

After the proposed AD was issued, we reviewed the figures we use to calculate the labor rate to do the required actions. To account for various inflationary costs in the airline industry, we find it appropriate to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The economic impact information, below, has been revised to reflect this increase in the specified hourly labor rate.

Cost Impact

Approximately 365 Model EMB-135 and EMB-145 series airplanes of U.S. registry will be affected by this AD.

The AFM revision that is currently required by AD 2000-13-02 takes approximately 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required AFM revision is estimated to be \$65 per airplane.

The disconnection of switches that is currently required by AD 2000-13-02 takes approximately 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required disconnection of switches is estimated to be \$65 per airplane.

The new AFM revisions required by this new AD will take approximately 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the new AFM revisions of this AD on U.S. operators is estimated to be \$23,725, or \$65 per airplane.

The new inspection required by this new AD will take approximately 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the inspection on U.S. operators is estimated to be \$23,725, or \$65 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing amendment 39-11801 (65 FR 39541, June 27, 2000), and by adding a new airworthiness directive (AD), amendment 39-13797, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2004-19-03 Empresa Brasileira De Aeronautica S.A. (EMBRAER): Amendment 39-13797.
Docket 2001-NM-292-AD. Supersedes AD 2000-13-02, Amendment 39-11801.

Applicability: Model EMB-135 and EMB-145 series airplanes; as identified in EMBRAER Alert Service Bulletin 145-36-A018, Change 01, dated October 20, 2000; certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent incorrect operation of the precooler differential pressure switches, which could result in inappropriate automatic shutoff of the engine bleed valve, and consequent inability to perform engine cross-bleed restarts or possible failure of the anti-ice system; and to ensure that the flightcrew is advised of proper procedures to restart an engine in flight using the auxiliary power unit; accomplish the following:

Restatement of Requirements of AD 2000-13-02

Revision to Airplane Flight Manual (AFM): Limitations Section

(a) For airplanes identified in AD 2000-13-02, amendment 39-11801: Within 24 hours after July 3, 2000 (the effective date of AD 2000-13-02, amendment 39-11801), revise the Limitations Section of the AFM to include the following statements (this may be accomplished by inserting a copy of this AD into the AFM; following accomplishment of paragraph (c) of this AD, the revisions required by this paragraph may be removed from the AFM):

"THE APU MUST BE OPERATIVE FOR EVERY DEPARTURE. SINGLE BLEED OPERATION IN ICING CONDITIONS IS PROHIBITED."

Revision to AFM: Abnormal Procedures Section

(b) For airplanes identified in AD 2000-13-02, amendment 39-11801: Within 24 hours after July 3, 2000, replace the existing "ENGINE AIRSTART" procedure in the Abnormal Procedures Section of the AFM with the following procedures (this may be accomplished by inserting a copy of this AD into the AFM):

"ENGINE AIRSTART

Affected engine:

One Electric Fuel Pump (A or B)—ON
Ignition—AUTO
Start/Stop Selector—STOP

Engine Bleed—CLOSE
Thrust Lever—IDLE
Airspeed and Altitude—REFER TO AIRSTART ENVELOPE

Perform an assisted start or windmilling, as required.

CAUTION: IN ICING CONDITIONS USE CROSSBLEED START ONLY, TO AVOID LOSS OF ANTI-ICE SYSTEM PERFORMANCE.

Assisted Start

Crossbleed Start:

N2 (operating engine)—ABOVE 80%
Crossbleed—AUTO OR OPEN
Engine Bleed (operating engine)—OPEN
Start/Stop Selector—START, THEN RUN
Engine Indication—MONITOR

Check ITT and N2 rising. Observe limits. Check ignition and fuel flow indication at 10% N2.

APU bleed start:

APU—START
APU Bleed—OPEN
Crossbleed—AUTO
Engine Bleed (operating engine)—CLOSE
Start/Stop Selector—START, THEN RUN
Engine Indication—MONITOR

Check ITT and N2 rising. Observe limits. Check ignition and fuel flow indication at 10% N2.

Windmilling Start:

Airspeed—ABOVE 260 KIAS
Minimum N2—12%
Start/Stop Selector—START, THEN RUN
ITT and N2—MONITOR

NOTE:

Windmilling start will be slower than an assisted start.

Windmilling start with N2 above 30% and increasing, the loss of altitude may be minimized, by reducing airspeed.

Start will be faster if ITT is below 320 [deg]C.

After Start:

Affected Engine Bleed—AS REQUIRED
Crossbleed—AUTO
APU Bleed—AS REQUIRED"

Disconnection of the Precooler Differential Pressure Switches

(c) For airplanes identified in AD 2000-13-02, amendment 39-11801: Within 100 flight hours after July 3, 2000, disconnect the electrical connector from the precooler differential pressure

switches in the left and right engine pylons, in accordance with EMBRAER Alert Service Bulletin 145-36-A018, dated April 14, 2000; or Change 01, dated October 20, 2000. Following accomplishment of this paragraph, the AFM revision required by paragraph (a) of this AD may be removed from the AFM.

New Requirements of This AD

Revision to AFM: Limitations Section

(d) For airplanes having serial numbers 145245, 145250 through 145255 inclusive, 145258 through 145262 inclusive, 145264 through 145324 inclusive, 145326, and 145327: Within 14 days after the effective date of this AD, revise the Limitations Section of the AFM to include statements approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA (Revision 56 to the EMBRAER EMB-145 AFM is one approved source of statements); or the following statements (this may be accomplished by inserting a copy of this AD into the AFM; following accomplishment of paragraph (f) of this AD, the revisions required by this paragraph may be removed from the AFM):

"THE APU MUST BE OPERATIVE FOR EVERY DEPARTURE. SINGLE BLEED OPERATION IN ICING CONDITIONS IS PROHIBITED."

Revision to AFM: Abnormal Procedures Section

(e) For airplanes having serial numbers 145245, 145250 through 145255 inclusive, 145258 through 145262 inclusive, 145264 through 145324 inclusive, 145326, and 145327: Within 14 days after the effective date of this AD, replace the existing "ENGINE AIRSTART" procedure in the Abnormal Procedures Section of the AFM with statements approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate (Revision 56 to the EMBRAER EMB-145 AFM is one approved source of statements); or the following procedures (this may be accomplished by inserting a copy of this AD into the AFM):

"ENGINE AIRSTART

Affected engine:

One Electric Fuel Pump (A or B)—ON

Ignition—AUTO

Start/Stop Selector—STOP

Engine Bleed—CLOSE

Thrust Lever—IDLE

Airspeed and Altitude—REFER TO AIRSTART ENVELOPE

Perform an assisted start or windmilling, as required.

CAUTION: IN ICING CONDITIONS USE CROSSBLEED START ONLY, TO AVOID LOSS OF ANTI-ICE SYSTEM PERFORMANCE.

Assisted Start:

Crossbleed Start:

N2 (operating engine)—ABOVE 80%

Crossbleed—AUTO OR OPEN

Engine Bleed (operating engine)—OPEN

Start/Stop Selector–START, THEN RUN
Engine Indication–MONITOR

Check ITT and N2 rising. Observe limits. Check ignition and fuel flow indication at 10% N2.

APU bleed start:

APU–START

APU Bleed–OPEN

Crossbleed–AUTO

Engine Bleed (operating engine)–CLOSE

Start/Stop Selector–START, THEN RUN

Engine Indication–MONITOR

Check ITT and N2 rising. Observe limits. Check ignition and fuel flow indication at 10% N2.

Windmilling Start

Airspeed–ABOVE 260 KIAS

Minimum N2–12%

Start/Stop Selector–START, THEN RUN

ITT and N2–MONITOR

NOTE:

Windmilling start will be slower than an assisted start.

Windmilling start with N2 above 30% and increasing, the loss of altitude may be minimized, by reducing airspeed.

Start will be faster if ITT is below 320 [deg]C.

After Start:

Affected Engine Bleed–AS REQUIRED

Crossbleed–AUTO

APU Bleed–AS REQUIRED"

Inspection of Electrical Connectors and Follow-on Actions

(f) For airplanes having serial numbers 145245, 145250 through 145255 inclusive, 145258 through 145262 inclusive, 145264 through 145324 inclusive, 145326, and 145327: Within 100 flight hours after the effective date of this AD, perform a one-time general visual inspection to ensure that electrical connector P1904 located in the right pylon is insulated and disconnected from precooler differential pressure switch S0354, and to ensure that electrical connector P1904 or P2252 located in the left pylon is insulated and disconnected from precooler differential pressure switch S0355, per the Accomplishment Instructions of EMBRAER Alert Service Bulletin 145-36-A018, Change 01, dated October 20, 2000. Following accomplishment of paragraph (f)(1), (f)(2), or (f)(3) of this AD, as applicable, the AFM revision required by paragraph (d) of this AD may be removed from the AFM.

(1) If all connectors are disconnected and insulated, no further action is required by this paragraph.

(2) If any connector is connected to a precooler differential pressure switch, prior to further flight, disconnect and insulate the connector per the Accomplishment Instructions of the alert service bulletin.

(3) If any connector is disconnected from a precooler differential pressure switch, but is not insulated, prior to further flight, insulate the connector per the Accomplishment Instruction of the alert service bulletin.

Note 1: For the purposes of this AD, a general visual inspection is defined as: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

(g) Actions accomplished before the effective date of this AD, per the Accomplishment Instructions of EMBRAER Alert Service Bulletin 145-36-A018, dated April 14, 2000; or EMBRAER Service Bulletin 145-36-0018, dated November 5, 2002; are considered acceptable for compliance with the actions specified in paragraph (f) of this AD.

Alternative Methods of Compliance

(h) In accordance with 14 CFR 39.19, the Manager, International Branch, ANM-116, Transport Airplane Directorate, is authorized to approve alternative methods of compliance for this AD.

Incorporation by Reference

(i) Unless otherwise specified in this AD, the actions shall be done in accordance with EMBRAER Alert Service Bulletin 145-36-A018, dated April 14, 2000; and EMBRAER Alert Service Bulletin 145-36-A018, Change 01, dated October 20, 2000; as applicable.

(1) The incorporation by reference of EMBRAER Alert Service Bulletin 145-36-A018, Change 01, dated October 20, 2000; is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of EMBRAER Alert Service Bulletin 145-36-A018, dated April 14, 2000; was approved previously by the Director of the Federal Register as of July 3, 2000 (65 FR 39541, June 27, 2000).

(3) Copies may be obtained from Empresa Brasileira de Aeronautica S.A. (EMBRAER), P.O. Box 343–CEP 12.225, Sao Jose dos Campos–SP, Brazil. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Note 2: The subject of this AD is addressed in Brazilian airworthiness directive 2000-04-01R2, dated May 28, 2001.

Effective Date

(j) This amendment becomes effective on October 27, 2004.

Issued in Renton, Washington, on September 9, 2004.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 04-21050 Filed 9-21-04; 8:45 am]

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